**HW ANSWERS p. 579**

2) Since the p-value is 0.11, we would fail to reject Ho, and conclude that mmeat = mbeef. So if we created an interval, 0 would be in the interval because 0 = no difference between the two averages.

3) (a) since the endpoints are negative this indicates that μmeat - μbeef = negative #'s. This tells us that μmeat < μbeef .

(b) Since 0 is not in the interval, this indicates to us that there is a difference between the average fat content for meat and beef hot dogs.

(c) Conf = 90% a = 0.10 (10%) for ≠ test. 0.05 for > or <

11) meanA = 40 meanB = 43 sA = 3 sB = 2 nA = 20 nB = 20

(a) **Conditions**:

- 2 independent SRS - stated random and the routes are assumed to be independent

of each other

- pop1 > 10n1 - there are more than 200 trips taken to work each route

pop2 > 10n2

- 2 normal populations - stated that both sets of data are roughly symmetric with

or n1 and n2 > 30 no outliers --> both normal pop

Conditions met --> t-distribution --> 2-sample t-Interval

(40 - 43) + (2.0345) = (-4.64, -1.36) df = 33

We are 95% confident that the difference between the average time to work with Route A and B is between -4.64 and -1.36 minutes.

Because the values are negative, Route A is faster (less time) than Route B.

(b) No, he should not believe the 5 min. claim because 5 min is not in the interval.

14)

(a) **Conditions**:

- 2 independent SRS - assumed representative and Egyptians from the different

time periods are indep.

- pop1 > 10n1 - there are more than 300 male Egyptians from 3000 BC

pop2 > 10n2 and more than 300 from 200 BC

- 2 normal populations - normal prob. plot of both data sets are linear with no

or n1 and n2 > 30 outliers --> both normal pop.

Conditions met --> t-distribution --> 2-sample t-Int

b) (135.633 - 131.367) + (2.045) = (1.878 6.655) df = 55

We are 95% confident that the difference between the average skull breadth of 4000 BC and 200 BC is between 1.878 and 6.655 mm.

(c) Since 0 is not in our interval, we have evidence that the average skull breadth is different between 4000 BC and 200 BC. Since the numbers are negative, we have evidence that the skull breadth is greater in 200 BC.

27) Ho: μS= μL

Ha: μS ≠ μL Conditions met --> t-distribution --> 2 sample t test

2\*P(t > 2.104|df = 34) = 0.0428

We reject Ho b/c p-value of 0.0428 < a = 0.05. We have sufficient evidence that the average amount of ice cream in the large bowl is not equal to the average amount in the small bowl.

36) (a) Ho: μM = μR

Ha: μM > μR Conditions met --> t-distribution --> 2 sample t test

P(t > -0.70006|df = 46) = 0.7563

We fail to reject Ho b/c p-value of 0.7563 > a = 0.05. We have insufficient evidence that listening to Mozart produces better results than listening to rap music.